

What is claimed is:

1. A hardened voyage data recorder, comprising:

(a) a removable memory subsystem;

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(b) a mounting base subsystem removably coupled to
said memory subsystem; and

10 (c) electronic circuits for electronically
accessing said memory subsystem, wherein said
electronic circuits provide an ETHERNET access
port for coupling said hardened voyage recorder
to an ETHERNET network.

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2. A hardened voyage data recorder according to claim 1
wherein said electronic circuits include firmware which
provides TCP/IP access over ETHERNET to said circuits.

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3. A hardened voyage data recorder according to claim 2
wherein said firmware includes web pages for configuring
said hardened voyage data recorder.

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4. A hardened voyage data recorder according to claim 1
wherein said electronic circuits are located in said
mounting base subsystem.

5. A hardened voyage data recorder according to claim 1 wherein said mounting base subsystem includes at least one watertight cable connector.

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6. A hardened voyage data recorder according to claim 1 wherein said mounting base subsystem includes a first watertight cable connector for coupling with a power supply and a second cable connector for coupling with an ETHERNET network.

7. A hardened voyage data recorder according to claim 1 wherein said electronic circuits accept both 110/220 VAC and 24 VDC power supplies.

8. A hardened voyage data recorder according to claim 1 further comprising a quick release V-clamp, wherein said removable memory subsystem has a lower flange, said mounting base subsystem has an upper flange, and said quick release V-clamp engages said upper flange and said lower flange whereby said memory subsystem and said base subsystem are removably coupled to each other.

9. A hardened voyage data recorder according to claim 8
wherein said quick release V-clamp has two quick release
5 levers.

10. A hardened voyage data recorder according to claim 1
wherein said removable memory subsystem includes non-
10 volatile memory enclosed within a boiler.

11. A hardened voyage data recorder, comprising:

15 (a) a removable memory subsystem having a lower
flange;

(b) a mounting base subsystem having an upper
flange; and

20 (c) a quick release V-clamp engaging said upper
flange and said lower flange whereby said
memory subsystem and said base subsystem are
removably coupled to each other.

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12. A hardened voyage data recorder according to claim
11 wherein said quick release V-clamp has two quick
release levers.

13. A hardened voyage data recorder according to claim
11 wherein said mounting base subsystem includes at least
5 one watertight cable connector.
14. A hardened voyage data recorder according to claim
11, wherein said mounting base subsystem includes a first
10 watertight cable connector for coupling with a power
supply and a second cable connector for coupling with a
data source.
- 15 15. A hardened voyage data recorder according to claim
11 wherein one of said upper flange and said lower flange
has a groove adapted to receive an O-ring.
- 20 16. A hardened voyage data recorder according to claim
11 wherein said upper flange has two concentric grooves,
each adapted to receive an O-ring.
- 25 17. A hardened voyage data recorder according to claim
16 further comprising one o-ring and one mesh gasket, one
disposed in one of said two concentric grooves and the
other disposed in the other of said two concentric
grooves.

18. A hardened voyage data recorder, comprising:

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(a) a removable memory subsystem; and

(b) a mounting base subsystem removably coupled to
said memory subsystem, wherein said removable
memory subsystem includes non-volatile memory
10 enclosed within a boiler.

19. A hardened voyage data recorder according to claim
18 wherein said mounting base subsystem includes at least
15 one watertight cable connector.

20. A hardened voyage data recorder according to claim
18 wherein said mounting base subsystem includes a first
20 watertight cable connector for coupling with a power
supply and a second cable connector for coupling with a
data source.

21. A hardened voyage data recorder according to claim
18 further comprising a quick release V-clamp, wherein
5 said removable memory subsystem has a lower flange, said
mounting base subsystem has an upper flange, and said
quick release V-clamp engages said upper flange and said
lower flange whereby said memory subsystem and said base
subsystem are removably coupled to each other.

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22. A hardened voyage data recorder according to claim
21, wherein said quick release V-clamp has two quick
release levers.

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23. A hardened voyage data recorder according to claim
21 wherein one of said upper flange and said lower flange
has a groove adapted to receive an O-ring.

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24. A hardened voyage data recorder according to claim
21 wherein said upper flange has two concentric grooves,
each adapted to receive an O-ring.

25. A hardened voyage data recorder according to claim
24 further comprising one o-ring and one mesh gasket, one
5 disposed in one of said two concentric grooves and the
other disposed in the other of said two concentric
grooves.

10 26. A hardened voyage data recorder, comprising:

- (a) a removable memory subsystem;
- (b) a mounting base subsystem removably coupled to
15 said memory subsystem; and
- (c) at least one memory interface converter chip
coupled to said removable memory subsystem.

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27. A hardened voyage data recorder according to claim
26 wherein said mounting base subsystem includes at least
one watertight cable connector.

28. A hardened voyage data recorder according to claim
26 wherein said mounting base subsystem includes a first
watertight cable connector for coupling with a power
5 supply and a second cable connector for coupling with a
data source.

29. A hardened voyage data recorder according to claim
10 26 further comprising a quick release V-clamp, wherein
said removable memory subsystem has a lower flange, said
mounting base subsystem has an upper flange, and said
quick release V-clamp engages said upper flange and said
lower flange whereby said memory subsystem and said base
15 subsystem are removably coupled to each other.

30. A hardened voyage data recorder according to claim
29 wherein said quick release V-clamp has two quick
20 release levers.

31. A hardened voyage data recorder according to claim
29 wherein one of said upper flange and said lower flange
25 has a groove adapted to receive an O-ring.

32. A hardened voyage data recorder according to claim
29 wherein said upper flange has two concentric grooves,
each adapted to receive an O-ring.

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33. A hardened voyage data recorder according to claim
32 further comprising one o-ring and one mesh gasket, one
disposed in one of said two concentric grooves and the
10 other disposed in the other of said two concentric
grooves.

34. A hardened voyage data recorder, comprising:

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(a) a removable memory subsystem, wherein said
removable memory subsystem includes a stacked
memory and a plurality of memory interface
chips arranged for communication with a
processor such that a large number of memory
chips may be driven; and

(b) a mounting base subsystem removably coupled to
said memory subsystem.

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35. A hardened voyage data recorder according to claim
34 wherein said mounting base subsystem includes at least
one watertight cable connector.

36. A hardened voyage data recorder according to claim
34 wherein said mounting base subsystem includes a first
5 watertight cable connector for coupling with a power
supply and a second cable connector for coupling with a
data source.

10 37. A hardened voyage data recorder according to claim
34 further comprising a quick release V-clamp, wherein
said removable memory subsystem has a lower flange, said
mounting base subsystem has an upper flange, and said
quick release V-clamp engages said upper flange and said
15 lower flange whereby said memory subsystem and said base
subsystem are removably coupled to each other.

20 38. A hardened voyage data recorder according to claim
37 wherein said quick release V-clamp has two quick
release levers.

25 39. A hardened voyage data recorder according to claim
37 wherein one of said upper flange and said lower flange
has a groove adapted to receive an O-ring.

40. A hardened voyage data recorder according to claim
37 wherein said upper flange has two concentric grooves,
5 each adapted to receive an O-ring.

41. A hardened voyage data recorder according to claim
40 further comprising one o-ring and one mesh gasket, one
10 disposed in one of said two concentric grooves and the
other disposed in the other of said two concentric
grooves.

42. A process for fabricating a hardened voyage data
15 recorder, comprising the steps of:

(a) utilizing a removable memory subsystem;

20 (b) removably coupling said memory subsystem to a
mounting base subsystem; and

25 (c) accessing said memory subsystem electronically
utilizing electronic circuits, wherein said
electronic circuits provide an ETHERNET access
port for coupling said hardened voyage recorder
to an ETHERNET network.

43. A process for fabricating a hardened voyage data recorder, comprising the steps of:

- (a) utilizing a removable memory subsystem having a lower flange;
- 5 (b) utilizing a mounting base subsystem having an upper flange; and
- 10 (c) removably coupling said memory subsystem and said base subsystem to each other utilizing a quick release V-clamp engaging said upper flange and said lower flange.

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44. A process for fabricating a hardened voyage data recorder, comprising the steps of:

- (a) utilizing a removable memory subsystem; and
- 20 (b) removably coupling a mounting base subsystem to said memory subsystem, wherein said removable memory subsystem includes non-volatile memory enclosed within a boiler.

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45. A process for fabricating a hardened voyage data recorder, comprising the steps of:

- 5 (a) utilizing a removable memory subsystem;
- 10 (b) removably coupling a mounting base subsystem to said memory subsystem; and
- 15 (c) coupling at least one memory interface converter chip to said removable memory subsystem.

46. A process for fabricating a hardened voyage data recorder, comprising the steps of:

- 20 (a) utilizing a memory subsystem including a stacked memory and a plurality of memory interface chips arranged for communication with a processor such that a large number of memory chips may be driven; and
- 25 (b) removably coupling a mounting base subsystem to said memory subsystem.